MEDIUM ACCESS CONTROL (MAC) PROTOCOL FOR WIRELESS ATM

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A protocol, method, and apparatus for managing network communications are disclosed which are particularly well suited for ATM communications across a wireless medium. Contiguous time slots within a frame are allocated to each node having traffic to send. Each node is assured a nominal bandwidth, and excess bandwidth is distributed by demand. The allocation of excess bandwidth can be dependent upon the size of the buffer at each node, as well as the time-criticality of each message. Nodes communicate their requests for allocation by appending such control information to the first of their transmitted packets. The allocation, of each node's transmit and receive time slots, is transmitted to all the nodes at the beginning of each frame. Thereafter, each node need not participate on the network until their allocated time periods, thereby allowing portable devices to enter inactive states to conserve power. The network is operated in a connection mode; connections are established in a relatively non-interfering manner by the use of periodically occuring beacons. Inactive, unconnected, nodes need only monitor the network during these beacon periods, further allowing for power conservation.